

Asp Thr Ile Phe Phe Val Leu Arg Lys Lys Thr Ser Gln Ile Thr Phe
130 135 140

Leu His Val Tyr His His Ala Ser Met Phe Asn Ile Trp Trp Cys Val
145 150 155 160

Leu Asn Trp Ile Pro Cys Gly Gln Ser Phe Phe Gly Pro Thr Leu Asn
165 170 175

Ser Phe Val His Ile Leu Met Tyr Ser Tyr Tyr Gly Leu Ser Val Phe
180 185 190

Pro Ser Met His Lys Tyr Leu Trp Trp Lys Lys Tyr Leu Thr Gln Ala
195 200 205

Gln Leu Val Gln Phe Val Leu Thr Ile Thr His Thr Met Ser Ala Val
210 215 220

Val Lys Pro Cys Gly Phe Pro Phe Gly Cys Leu Ile Phe Gln Ser Ser
225 230 235 240

Tyr Met Leu Thr Leu Val Ile Leu Phe Leu Asn Phe Tyr Val Gln Thr
245 250 255

Tyr Arg Lys Lys Pro Met Lys Lys Asp Met Gln Glu Pro Pro Ala Gly
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Lys Glu Val Lys Asn Gly Phe Ser Lys Ala Tyr Phe Thr Ala Ala Asn
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Gly Val Met Asn Lys Lys Ala Gln
290 295

<210> 2

<211> 888

<212> DNA

<213> Homo sapiens

<400> 2

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<210> 4
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<213> Artificial Sequence

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<220>
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<400> 4
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<210> 5
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<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic
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<400> 5
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<210> 6
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<220>
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<210> 7
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primer

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29

<210> 8
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<400> 8
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37

<210> 9
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
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primer

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39

<210> 10
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<210> 11
<211> 20
<212> DNA
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<220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 11
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 <210> 12
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 12
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 <210> 13
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 13
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 <210> 14
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 14
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 <210> 15
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 primer

 <400> 15
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<210> 16
 <211> 479
 <212> PRT
 <213> Homo sapiens

<400> 16

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| Met | Leu | Gln | Ile | Asn | Gln | Met | Phe | Ser | Val | Gln | Leu | Ser | Leu | Gly | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Thr | Trp | Glu | Ser | Glu | Gly | Ser | Ser | Ile | Lys | Lys | Ala | Gln | Gln | Ala |
| | | | 20 | | | | 25 | | | | | | 30 | | |
| Val | Ala | Asn | Lys | Ala | Leu | Thr | Glu | Ser | Thr | Leu | Pro | Lys | Pro | Val | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Pro | Pro | Lys | Ser | Asn | Val | Asn | Asn | Asn | Pro | Gly | Ser | Ile | Thr | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Val | Glu | Leu | Asn | Gly | Leu | Ala | Met | Lys | Arg | Gly | Glu | Pro | Ala | Ile |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Tyr | Arg | Pro | Leu | Asp | Pro | Lys | Pro | Phe | Pro | Asn | Tyr | Arg | Ala | Asn | Tyr |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Asn | Phe | Arg | Gly | Met | Tyr | Asn | Gln | Arg | Tyr | His | Cys | Pro | Val | Pro | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ile | Phe | Tyr | Val | Gln | Leu | Thr | Val | Gly | Asn | Asn | Glu | Phe | Phe | Gly | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Lys | Thr | Arg | Gln | Ala | Ala | Arg | His | Asn | Ala | Ala | Met | Lys | Ala | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Gln | Ala | Leu | Gln | Asn | Glu | Pro | Ile | Pro | Glu | Arg | Ser | Pro | Gln | Asn | Gly |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Glu | Ser | Gly | Lys | Asp | Met | Asp | Asp | Asp | Lys | Asp | Ala | Asn | Lys | Ser | Glu |
| | | | | 165 | | | | | 170 | | | | 175 | | |
| Ile | Ser | Leu | Val | Phe | Glu | Ile | Ala | Leu | Lys | Arg | Asn | Met | Pro | Val | Ser |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Phe | Glu | Val | Ile | Lys | Glu | Ser | Gly | Pro | Pro | His | Met | Lys | Ser | Phe | Val |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Thr | Arg | Val | Ser | Val | Gly | Glu | Phe | Ser | Ala | Glu | Gly | Glu | Gly | Asn | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Lys | Lys | Leu | Ser | Lys | Lys | Arg | Ala | Ala | Thr | Thr | Val | Leu | Gln | Glu | Leu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Lys | Leu | Pro | Pro | Leu | Pro | Val | Val | Glu | Lys | Pro | Lys | Leu | Phe | Phe |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Lys | Arg | Pro | Lys | Thr | Ile | Val | Lys | Ala | Gly | Pro | Glu | Tyr | Gly | Gln |
| | | | 260 | | | | | 265 | | | | | 270 | | |

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 Glu Lys Glu Pro Asp Tyr Val Leu Leu Ser Glu Arg Gly Met Pro Arg
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 Arg Arg Glu Phe Val Met Gln Val Lys Val Gly Asn Glu Val Ala Thr
 305 310 315 320
 Gly Thr Gly Pro Asn Lys Lys Ile Ala Lys Lys Asn Ala Ala Glu Ala
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 Met Leu Leu Gln Leu Gly Tyr Lys Ala Ser Thr Asn Leu Gln Asp Gln
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 Leu Glu Lys Thr Gly Glu Asn Lys Gly Trp Ser Gly Pro Lys Pro Gly
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 370 375 380
 Pro Asp Val Tyr Gln Glu Met Glu Ala Ser Arg His Lys Val Ile Ser
 385 390 395 400
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 420 425 430
 Ala Arg Glu Leu Leu Met Asn Gly Thr Ser Ser Thr Ala Glu Ala Ile
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<211> 1437

<212> DNA

<213> Homo sapiens

<400> 17

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 ccaccacata tgaaaagctt tgttactcga gtgtcagtag gagagttctc tgcagaagga 660

| | | | | | | |
|------------|-------------|-------------|------------|-------------|-------------|------|
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| aaaaaacttc | cacctcttcc | tgtggtggaa | aagccaaaac | tatttttttaa | aaaacgcctt | 780 |
| aaaacaatag | taaaggcccg | accagaatat | ggccaaggga | tgaaccctat | tagccgcctg | 840 |
| gcgcaaattc | aacaggccaa | aaagggaaaag | gagccggatt | atgttttgct | ttcagaaaaga | 900 |
| ggaatgcctc | gacgtcgaga | atttgtgatg | caggtgaagg | taggcaatga | agttgctaca | 960 |
| ggaacaggac | ctaataaaaa | gatagccaaa | aaaaatgctg | cagaagcaat | gctgttaca | 1020 |
| cttggttata | aagcatccac | taatcttcag | gatcaacttg | agaagacagg | ggaaaacaaa | 1080 |
| ggatggagtg | gtccaaagcc | tgggttttct | gaaccaacaa | ataatactcc | aaaaggaatt | 1140 |
| cttcatttgt | ctcctgatgt | ttatcaagag | atggaagcca | gccgccacaa | agtaatctct | 1200 |
| ggcactactc | taggctattt | gtcacccaaa | gatatgaacc | aaccttcaag | ctctttcttc | 1260 |
| agtatatctc | ccacatcgaa | tagttcagct | acaattgcca | gggaactcct | tatgaattga | 1320 |
| acatcttcta | cagctgaagc | cataggttta | aaaggaagtt | ctcctactcc | cccttgttct | 1380 |
| ccagtacaac | cttcaaaaaca | actggaatat | ttagcaagga | ttcaaggctt | tcaggta | 1437 |

<210> 18

<211> 4058

<212> DNA

<213> Homo sapiens

<400> 18

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| tttagcttac | tttttaaaga | ttgaagaaaa | aaaagaagac | agaaaaagaa | gaactcaaag | 120 |
| atacacaaag | taatttgaac | caaggctcag | aagtttttgg | agccgtgagg | gatacagcag | 180 |
| tttggtcaat | attgtcttaa | catgcttcaa | ataaatcaga | tgttctcagt | gcagctgagt | 240 |
| cttggtgagc | agacatggga | atccgaaggc | agcagtataa | agaaggctca | gcaggctggt | 300 |
| gccaataaag | ctttgactga | atctacgctt | cccaaaccag | ttcagaagcc | acccaaaagt | 360 |
| aatgttaaca | ataaccagg | cagtataact | ccaactgtgg | aactgaatgg | gcttgctatg | 420 |
| aaaaggggag | agcctgccat | ctacaggcca | ttagatccaa | agccattccc | aaattataga | 480 |
| gctaattaca | actttcgggg | catgtacagt | cagaggtatc | attgcccagt | gcctaagatc | 540 |
| ttttatgttc | agctcactgt | aggaaataat | gaattttttg | gggaaggaaa | gactcgacaa | 600 |
| gctgctagac | acaatgctgc | aatgaaagcc | ctccaagcac | tgcagaatga | acctattcca | 660 |
| gaaagatctc | ctcagaatgg | tgaatcagga | aaggatatgg | atgatgacaa | agatgcaaat | 720 |
| aagtctgaga | tcagcttagt | gtttgaaatt | gctctgaagc | gaaatatgcc | tgtcagtttt | 780 |
| gaggttatta | aagaaagtgg | accaccacat | atgaaaagct | ttgttactcg | agtgtcagta | 840 |
| ggagagttct | ctgcagaagg | agaaggaaat | agcaaaaaac | tctccaagaa | gcgcgctgcg | 900 |
| accaccgtct | tcaggagct | taaaaaactt | ccacctcttc | ctgtgggtgga | aaagccaaaa | 960 |
| ctatttttta | aaaaacgccc | taaaacaata | gtaaaggccg | gaccagaata | tggccaaggg | 1020 |
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| tatgttttgc | tttcagaaaag | aggaatgcct | cgacgtcgag | aatttgtgat | gcagggtgaag | 1140 |
| gtaggcaatg | aagttgctac | aggaacagga | cctaataaaa | agatagccaa | aaaaaatgct | 1200 |
| gcagaagcaa | tgctgttaca | acttggttat | aaagcatcca | ctaactttca | ggatcaactt | 1260 |
| gagaagacag | gggaaaacaa | aggatggagt | ggtccaagc | ctgggtttcc | tgaaccaaca | 1320 |
| aataatactc | caaaaggaat | tcttcatttg | tctcctgatg | tttatcaaga | gatggaagcc | 1380 |
| agccgccaca | aagtaatctc | tggcactact | ctaggctatt | tgtcacccaa | agatatgaac | 1440 |
| caaccttcaa | gctctttctt | cagtatatct | cccacatcga | atagttcagc | tacaattgcc | 1500 |
| agggaactcc | ttatgaatgg | aacatcttct | acagctgaag | ccatagggtt | aaaaggaagt | 1560 |
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| attcaaggct | ttcagggtatg | aattaaaagc | aaaaacaaaa | aacaaaacaa | ttcattagcc | 1680 |
| tcagattctt | catctgtata | catcacaaag | ctcattcttg | cctgctagta | tggcctacat | 1740 |
| gccacttacg | ttttaagtta | tttaggaaca | caaaggacag | acaaaaaagc | catatgcaca | 1800 |
| tgcctcattt | tctcttattt | ttgatctatc | tagtaattct | tttgcctgct | gtctcttctc | 1860 |
| cattttcctt | cttctttttt | aagcattttt | catattcttc | actgtcttct | atgttggtctt | 1920 |
| gattaggtgc | atctatctct | tcgctctgtc | ttccacaaaac | aaaaattctg | ccttcagaca | 1980 |
| tttggtgtta | gtatttcaca | ctcagttctc | ccttttttta | cataaggatt | gagtttcttt | 2040 |
| ttatgatgat | tttaccttta | tagcaatttt | gaatttttgc | ttctgttgct | agtattgatt | 2100 |
| caggtacacc | attaagatac | aacattctag | aagtctatta | ccttaggagt | taattaaaca | 2160 |
| tgatatattga | agaataatga | aatgctttat | agttgtttga | ggcataacaa | tgtgtatttg | 2220 |

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39

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<211> 39

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic primer

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39

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<223> Description of Artificial Sequence: Synthetic
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